

Getting into Modular

Modulation

ControlVoltage.net

Sept 2017

- **ADSR - Attack, Decay, Sustain, Release**
- **LFO - Shapes, Wavetable, Mixing**
- **Random - Staircases, Variable voltages, Noise, Shift Register**

In this class we will talk about things that move the modular. From things as simple as ADSR or AD generators, LFOs, to sequencers and shift registers. You can use modulation to control the volume of a VCA, or use it to change the frequency of a filter. Use an LFO to move a wave folder, or the length of the decay. There are so many ways to use modulation, we will explore some of those options in tonight's class.

ADSR

- This is most commonly associated with the VCA section of the synth.
- ADSR is the full Attack Decay Sustain Release.
- AD, AR, AHR, AHD is used sometimes too. Attack Decay, Attack Release, Attack Hold Release, Attack Hold Decay, even other combinations.
- ADSR is also associated with the filter in Moog, Dave Smith, Oberheim, Ect...
- Useful as a 1-shot LFO.
- Envelopes commonly LOOP too which make them LFO

LFO

- Low Frequency Oscillator which is below 20hz.
- Sync/Reset can reset the wave.
- LFO have square sine saw triangle typically, but now a days can have all types of other shapes.
- Wavetable is arbitrary functions based on the designer. They can be hybrid waves like saw/ sine of square triangle.
- Mixers can make analog or simple LFOs and make them complex.

Random Functions

- Random is something inside of synthesizers that make staircase functions or melodies based on fluctuation in voltage, similar to a bass line or lead melody.
- Variable voltages can be burst generators, or triggers combined to make complex rhythms.
- Noise is the combination of every frequency or clusters of frequency.
- Shift registers can copy and apply voltage that is identical but staggered or behind the main melody line.

Sequencers

- Planned events that change over time.
- Triggers "When", Voltages "Pitches".
- Sequencers can make LFO or waves.
- Storage.
- Make songs.

The modular can be an amazing place for modulation, don't forget:

Wednesday, September 13, 2017

AM - Amplitude Modulation
FM - Frequency Modulation
RingMod - Ring Modulation
Wave Fold - Bending waves
Filter - EQ/Harmonic shaver LP,BP,HP,NP
Effects - Distortion, Delay, Phaser, Reverb, Band EQ
Clock - Master Tempo
Mixer - Can mix both CV, Audio, LFO Ect...

Thanks for coming out tonight. Email me if you have questions.
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